Claims

1. Vesicle for binding a substance,

- having a membrane containing amphiphilic molecules,
- a pore-forming unit contained in the membrane, in order to allow access to the vesicle interior,

characterised in that the vesicle contains, in the vesicle interior, a binding substance for binding the substance to be bound, and wherein the binding substance is substantially unable to diffuse through the pore formed by the pore unit.

2. Vesicle according to claim 1, characterised in that the binding substance is equipped to provide an ionic bond, a hydrogen bridge bond and/or a hydrophobic interaction.

3. Vesicle according to any one of the preceding claims, characterised in that the pore unit contains a protein or a protein part selected from the group consisting of

a) a transmembrane protein,
b) a transmembrane protein having an alpha-helical transmembrane structure,
c) a transmembrane protein having a β-barrel transmembrane structure,
d) a transmembrane structure of a transmembrane protein, and
e) a protein having a structure that is structurally homologous to a transmembrane structure of one of the proteins according to a), b), c) and/or d).

4. Vesicle according to any one of the preceding claims, characterised in that the pore unit has an inside pore diameter having a width of more than 1 nm.

5. Vesicle according to any one of the preceding claims, characterised in that the pore unit forms an enantioselective pore.

6. Vesicle according to any one of the preceding claims, characterised in that the vesicle has a positively charged oligomer or polymer in the vesicle interior.

7. Vesicle according to claim 6, characterised in that the vesicle contains polylysin in the vesicle interior.

8. Use of a vesicle according to any one of the preceding claims for binding a substance.

9. Use according to claim 8, wherein the substance to be bound is a nucleic acid.

10. Method of binding a nucleic acid, which comprises bringing the nucleic acid to be bound into contact with a vesicle according to any one of claims 1 to 7.

11. Method of releasing a nucleic acid, which comprises the steps:

a) binding a nucleic acid in a vesicle by a method according to claim 10, and

b) then releasing the bound nucleic acid by applying a shear stress to the vesicle and/or dissolving the vesicle and/or by adding a salt.